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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,406	10/08/2003	Steven E. Zimlin	65362-019	4330

7590 06/28/2005

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EXAMINER

EDWARDS, ANTHONY Q

ART UNIT	PAPER NUMBER
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2835

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/680,406	Applicant(s) ZIMLIN ET AL.	
	Examiner Anthony Q. Edwards	Art Unit 2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “component sides of the storage devices facing away from each other” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Referring to amended independent claims 1, 10 and 20, the claims filed April 1, 2005 now recite "component sides of the storage devices facing away from each other." There is no mention, however, of these "component sides" in the as-filed specification. The remaining claims depend from the aforementioned independent claims and are rejected under 35 U.S.C. 112, first paragraph for at least the same reasons.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-29 are rejected under 35 U.S.C. 103(a) as being as obvious over U.S. Patent No. 6,618,249 to Fairchild. Referring to claim 1, Fairchild discloses a storage device comprising a cabinet (not shown) capable of holding a plurality of modules (26/62), see Figs. 2 and 4, capable of containing a plurality of storage devices (18), said cabinet having a docking port (not shown)

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being configured to electrically connect to said modules, each module (26/62) of said plurality of modules including a board (82); see Fig. 4, having a plurality of ports (84), each port of said plurality of ports being capable of electrically coupling (i.e., connecting) to a storage device (18), and said plurality of ports (84) being arranged in two rows, one row along each of two lengthwise edges of the board, wherein a coupling direction of the ports is outward from the board (82). See Fig. 4, which shows the two rows as claimed, as well as a third row having another port between the two lengthwise edges of the board.

Fairchild as modified does not specifically teach having component sides of the storage devices facing away from each other and non-component sides of the storage devices facing each other. Based on the applicant's Remarks, filed April 1, 2005, it is the Examiner's understanding that "component sides" relate to the "side of the drive where the electronics are located." Although Fairchild does not specifically disclose this limitation, it has been held that rearranging parts of an invention involves only routine skill in the art (see *In re Japiske*, 86 USPQ 70). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to rearrange the orientation of the storage devices, such that the component sides of the storage devices are facing away from each other and the non-component sides of the storage devices are facing each other, since this arrangement would provide more effective cooling of each the component side of the storage devices.

Referring to claim 10, Fairchild as modified above discloses a storage apparatus, including a housing (26/62) holding said board and configured to hold a plurality of devices (18) in rows with a lateral surface of said storage devices facing parallel to a lateral edge of said board when said plurality of devices are connected to said board (see Fig. 2-4).

Referring to claims 2 and 11, Fairchild as modified discloses a storage device and storage apparatus, respectively, wherein each module (26/62) further includes a side housing member (22) having raised portions (24) and lowered portions (50), said raised portions providing a channel to allow airflow through said module. See Fig. 1B and col. 4, lines 25-49.

Referring to claims 3 and 12, Fairchild as modified discloses a storage device and storage apparatus, respectively, wherein each module (26/62) further includes a top housing member (28) having lateral raised portions (i.e., portion having vents (32/34)) and lateral lowered portions (i.e., portion below vents), said lateral raised portions providing a channel to allow airflow through said module. See Fig. 1A and col. 3, lines 9-16.

Referring to claims 4 and 13, Fairchild as modified does not teach the top housing including a plurality of individually removable segments. It is well known, however, that constructing a formerly integral structure in various elements has been held to involve only routine skill in the art (see MPEP 2144.04; *In re Nerwin v. Erlichman*, 168 USPQ 177, 179). It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the device of Fairchild, such that the top housing (28) is constructed into a plurality of individually removable segments, since individually removable segments would allow for removal of separate modules (26/62) from the front of the storage apparatus (10) of Fairchild without having to remove the entire top housing from the cabinet.

Referring to claims 5 and 14, Fairchild as modified discloses a storage device and storage apparatus, respectively, wherein each module (26/62) further includes a bottom housing portion (50) having raised bottom portions (88) and lowered bottom portions (80) providing a

channel to allow placement of interconnections (98) to said plurality of ports (84). See Figs. 4, 6A and 6B and the corresponding specification.

Referring to claims 6 and 15, Fairchild as modified discloses a storage device and storage apparatus, respectively, wherein lowered bottom portions provide mechanical support to said board (82). See Figs. 4, 6A and 6B and the corresponding specification.

Referring to claims 7 and 16, Fairchild as modified discloses a storage device and storage apparatus, respectively, wherein said board (82) further includes an electrical connector (not shown) capable of electrically coupling said module to said docking port in said cabinet, and is inherently capable of receiving a signal. See Fig. 4 and col. 8, lines 34-40.

Referring to claims 8 and 17, Fairchild as modified discloses a storage device and storage apparatus, respectively, wherein said board further includes a latching mechanism (86) capable of mechanically connecting said module to said docking port (42) in said cabinet. See Fig. 4 and col. 7, lines 50-63.

Referring to claims 9 and 18, Fairchild as modified discloses a storage device and storage apparatus, respectively, and storage apparatus, respectively, wherein each module of said plurality of modules is configured to be electrically disconnected and mechanically removed from a docking port within said cabinet by a single operation, and to allow a single disk drive of said plurality of disk drives to be removed without disturbing a connection of other disk drives connected or coupled to the board of the module. See col. 5, lines 45-49.

Referring to claim 19, Fairchild as modified discloses a storage apparatus, wherein said housing is made of thermally conductive material. See col. 7, lines 35-40 and col. 8, lines 50-57.

Method claims 20-29 are also rejected under 35 U.S.C. 103(a) as being as obvious over Fairchild as modified. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

Response to Arguments

Applicant's arguments filed April 1, 2005 have been fully considered but they are not persuasive. As indicated above, the recitation in the claims of the connector being arranged such that the disk drives or storage devices are "arranged in rows with component sides of the storage devices facing away from each other and non-component sides of the storage devices facing each other" is not shown in the drawings or described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Notwithstanding, as indicated above, the Examiner finds such limitations to be obvious in view of the prior art reference to Fairchild. Although Fairchild does not specifically disclose the orientation of the storage drives as claimed, it would have been obvious to one having ordinary skill in the art at the time of the invention to rearrange the orientation of the storage devices, such that the component sides of the storage devices are facing away from each other and the non-component sides of the storage devices are facing each other, since this arrangement would provide more effective cooling of each the component side of the storage devices.

Furthermore, Fairchild discloses a module (26/62) effectively comprising two rows as claimed, as well as a third row having another port between the two lengthwise edges of the board.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Q. Edwards whose telephone number is 571-272-2042. The examiner can normally be reached on M-F (7:30-3:00) First Friday Off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on 571-272-2800, ext. 35. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 14, 2005

aqe


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